Koa Jewelry Chest

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This jewelry box, from P & D Designs of San Luis Obispo, California, is another in the line of fine contemporary work we've seen generated by West Coast craftsmen. We found the box at the Atlantic City Buyer's Market, one of the major craft fairs where woodworkers and other artisans sell their products to retailers.

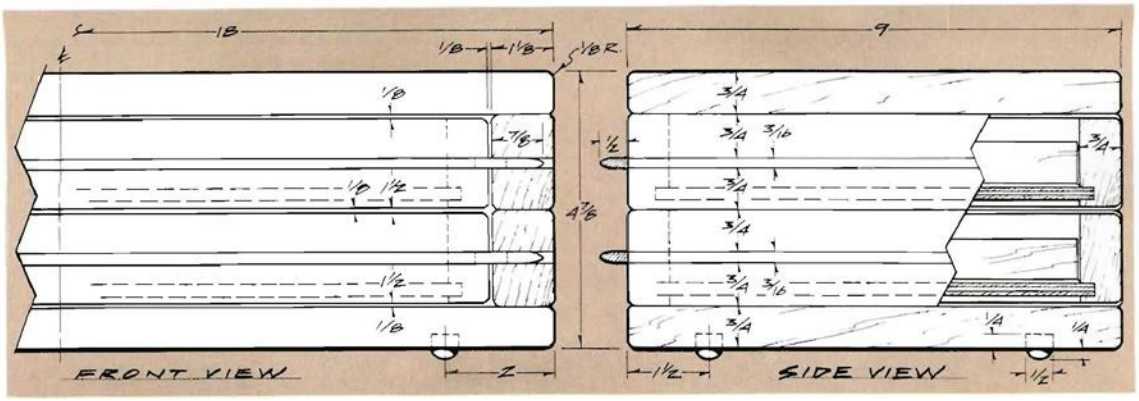
The box combines a simple design with a unique modular drawer system. As shown in the exploded view, the basic box is just a top and bottom (A) sandwiched around ends (B). The ends are joined together and fastened to the top and bottom with splines (C). The photo shows a two-drawer chest, but you can add more drawers as needed. For each extra drawer add a pair of ends.

Like much contemporary work, the jewelry box relies on attractive woods for its appeal. This box is a combination of just two woods, koa (a Hawaiian wood) and padauk. Koa is easy to work and has a multitude of lovely grain patterns, and padauk, with it's distinctive deep red color, adds contrast. The padauk is used for the center lamination in the end sections, for the stops (D), and for the drawer pulls (I). This arrangement makes the padauk accent pieces and pulls appear as a continuous stripe of padauk in a body of koa. If you prefer you can substitute contrasting domestic hardwoods or other combinations of exotics for the koa and padauk.

Start by laminating enough stock for the ends. As the elevation shows, the end lamination is a sandwich of two $^{3}/_{4}$ in. thick by $1^{1}/_{8}$ in. wide strips around a $^{3}/_{16}$ in. thick center. You can make the lamination as individual ends, but it's easier to laminate longer lengths and then crosscut them to length. At the very least, laminate enough stock for a pair of ends at a time. This will insure consistency in each pair. Note that the center strips are also sized to the $1^{1}/_{8}$ in. width at this time. The groove for the stops isn't cut until later.

While waiting for the end laminations to dry, make the remaining parts. Cut the top and bottom to size and round the ends and edges. Now's also a good time to cut your splines and stops to size. The stops are cut from the same $^{3}/_{16}$ in. thick stock that you used for the center laminations, but the splines are $^{1}/_{4}$ in. thick and can be cut from any hardwood scrap stock. Take careful note of the grain direction of these parts. Splines should always be cut so the grain runs perpendicular to the joint. The stops are cut so the $^{5}/_{8}$ in. dimension is the length, not the width.

Also cut the drawer parts to size. Start with sufficient $^{3}/_{4}$ in. thick by $1^{1}/_{2}$ in. wide material for the drawers you'll need. The same stock is used for the



drawer front and back (E) and the sides (F). Set the dado head for a 1/4 in. wide by 1/4 in. deep cut, position the rip fence 1/8 in. away from the dado head, and establish the groove for the 1/4 in. thick plywood drawer bottom (G). As you'll note from the elevations and the Bill of Materials, the drawers are sized so there's a 1/8 in. space all around. With normal case construction, where you'll be trying to achieve drawer clearance tolerances of about 1/16 in. to 1/32 in., the drawers are made and sized after the case is assembled. But with the generous 1/8 in. allowance, which is an important design element on this box, you can cut and assemble the drawer parts now. This also helps minimize blade switching in the table saw later.

Miter the ends of the drawer front, back and sides, and then glue up the parts around the bottom. Note that our Bill of Materials dimensions assume a perfect fit of the bottom in the grooves. In practice, you should size the bottom a little less than the actual groove-to-groove dimensions. This way you'll avoid a situation where a bottom that's too big could prevent the miters from *closing up tight* at the corners. Be sure to use plenty of glue at the miters, where the 50 percent end grain joint will absorb it readily. For a strong joint here, it helps to apply two layers of glue to each end. Wipe on a first application with a putty knife, forcing the glue into the end-grain pores. Wait a few minutes, then apply a second layer of glue before assembly. You'll need a band clamp with four 90-degree corner pieces to hold the drawer parts in place while the glue dries.

Bill of Materials
(all dimensions actual)

Part	Description	Size	No. Req'd.*
A	Top/Bottom	3/4 x 9 x 18	2
B	End	1 1/8 x 1 11/16 x 9	4
C	Spline	1/4 x 3 x 1/2	6
D	Stop	3/16 x 1 x 5/8	8
E	Drawer Front/Back	3/4 x 1 1/2 x 15 1/2	4
F	Drawer Side	3/4 x 1 1/2 x 9	4
G	Drawer Bottom	1/4 x 8 x 14 1/2	2
H	Divider	1/8 x 1/2 stock	As Req'd
I	Pull	3/16 x 3/4 x 1 7/8	2
J	Foot	1/2 dia. x 1/2 long	4
K	Liner	Felt	As Req'd

* Number required is for a box with two drawers.

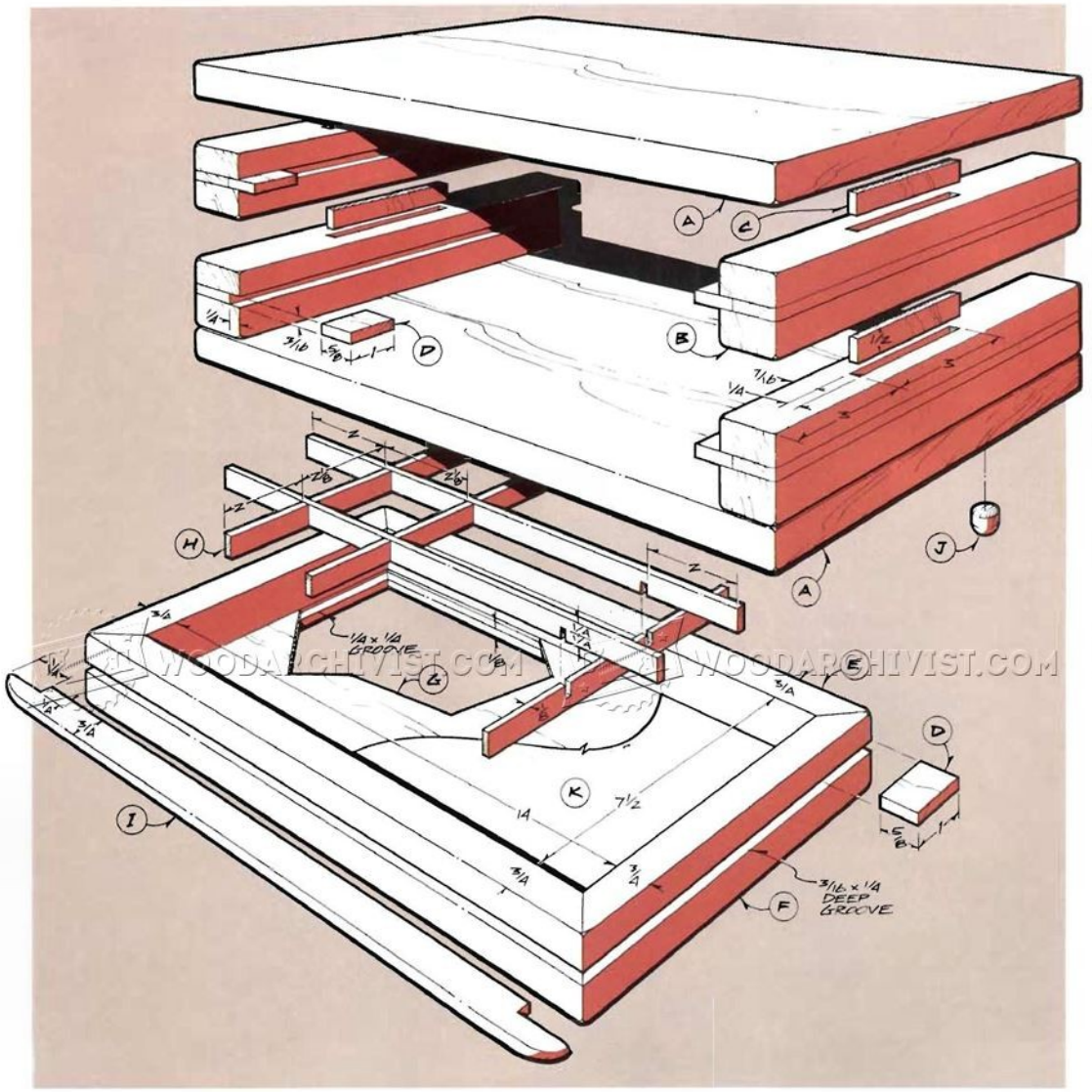
While the drawers are in clamps, cut the dividers (H) to size. Run off enough 1/8 in. thick by 1/2 in. wide stock as needed for the number of drawers your box will have, then lay out as needed for the jewelry collection that will be housed there. The layout shown is only a suggestion; for a ring storage drawer you'll want to use a 1 in. square grid.

With the end laminations and the drawers dry and out of clamps, you can cut the grooves for the stops and drawer pulls. Set the dado head for a 3/16 in. wide by 1/4 in. deep cut. Locate the rip fence 3/4 in. from the blade for the grooves in the end laminations, then reset the rip fence 5/8 in. from the dado head for the grooves in the sides and front of the drawers. But when cutting these grooves, gauge off the top edge of the top drawer and the bottom edge of the lower drawer. This will maintain the 1/8 in. space between the drawers. Note that if you have three or more drawers, for the middle drawer or drawers you'll want to locate the groove dead center on the 1 1/2 in. drawer height. The distance between the middle drawers will work out to a little more than 1/8 in., but your eye won't pick up the variance in spacing. After the grooves are cut, radius the edges of the drawers as shown.

You are now ready to assemble the box. Using the router table and a 1/4 in. diameter straight cutter, establish the spline grooves in the top, bottom, and end laminations. You'll need to set up stops about 12 in. apart (each stop 6 in. from the bit) to produce the 3 in. long spline groove. You can use a 1/4 in. chisel and square the ends of the spline grooves, as our illustrations show, or just leave the groove ends round, and round the ends of the splines to fit. Radius the edges of the end laminations, and glue the parts together.

Now glue the stops in place. Note that the four stops for each drawer actually serve both as guides and stops. Two are glued into the grooves in the end laminations, flush with the front; the other two are glued into the grooves in the drawer sides, flush with the back.

Once the box and stops have dried, you can mount the drawers. The drawers slide in from the back. After the pulls are mounted, the drawers will be perma-



nently in place; the stops prevent them from pulling all the way out. But first you'll want to make sure that the drawers slide easily. This may take a little hand sanding to thin and shorten the stops, if they are binding in the grooves. Add a little paraffin wax to ease the drawer action.

Once you are satisfied that the drawers are operating properly, add the pulls. The pulls are shaped, notched at the ends, and test-fitted first. Don't forget that the pulls are glued in place with the drawers mounted in the box.

The feet (J) are just short lengths of 1/2 in. diameter dowel stock, rounded over on the end. Drill the 1/2 in. diameter by 1/4 in. deep holes, glue the feet in place, and apply the finish. We used a Danish oil penetrating finish; two coats topped with an application of paste wax. Felt fabric (K) wrapped around a cardboard stiffener serves as a drawer liner to cushion your valuables.